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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/169,127	12/20/1993	HISATO SHINOHARA	0756945	2677

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EXAMINER	
PADGETT, MARIANNE L	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/169,127	SHINOHARA ET AL.	
	Examiner	Art Unit	
	Marianne L. Padgett	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/27/2006 & 8/25/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *61-80,91-94,101,104-107,131 and 140-180* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *61-80.91-94,101,104-101,131,140-180* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

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1. Claims 61-65, 71-75, 91, 144, 151, 155-163, 166-167 & 173-175 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Process claims such as independent claims 61 recite formation of a 9-single Crystal semiconductor layer any radiation pair of, but then require "removing an insulating layer comprising silicon oxide from an upper surface of the crystallize semiconductor layer", however it is unclear from the claim language where this silicon oxide layer comes from, since it was never claim to be deposited, hence it is unclear how caught one can remove something that does not necessarily exist. It also leaves the claim open to speculation, such as since this insulating layer was not necessarily present when irradiation occurred, did they irradiation while crystallizing the semiconductor layer, also cause surface oxidation? Also lacking any knowledge of where on the upper surface this insulating layer resides, it could be a masking layer, such that irradiation is blocked from some areas of the semiconductor layer, but not others, using a lateral crystallization technique? Also, where is applicants' support for a silicon oxide layer that has no clear origin? Pages 11-12 indicate that an insulating layer (silicon oxide or silicon nitride having thickness 200-1500 Angstroms) that has been deposited on a semiconductor layer, then patterned to form semiconductor islands (semiconductor plus insulating layer) which are irradiated, then the insulating layer is removed after crystallization & a different insulating layer then deposit thereon, but due to the uncertainty in the claim language, the scope of the claim is not limited to such a situation.

It is noted that new claims 176-180 correct the clarity problem in supplying clear context (and partial support as discussed below).

2. Claims 61-65, 71-75, 91, 144, 151, 155-163, 166-167, 173-175 & 176-180 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As noted above, the scope of the claim is inclusive of options that are broader than the scope of the enabling disclosure. Also new claims 176-180 are lacking with respect to their relationship of where they reside during the crystallization, i.e. as an intervening layer between the irradiation source and the semiconductor layer. While the claims are inclusive of this option, they are not restricted there to as exemplified above, hence still encompass options not supported by the more specific disclosure of the specification.

Claims 61-65, 71-75 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an insulating layer of silicon oxide or silicon nitride having a thickness of 200-1500 Angstroms deposited before the irradiation step, where the irradiation crystallization process is performed with the insulating layer covering the semiconductor layer being crystallized, and where this insulating layer is removed after irradiation before proceeding with further processing steps, does not reasonably provide enablement for removal of "an insulating layer comprising silicon oxide" from an unknown source in an uncertain relationship to the irradiation step itself. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. See above discussion.

3. Claims 71-80, 93-94, 101, 106-107 are objected to because of the following informalities: acronyms and abbreviations employed in claims should on first usage in a claim sequence be written out in full in order to clearly define them. See the acronym "TFT" used in the preamble is of the independent claims. Appropriate correction is required.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 61-80, 91-94, 101, 104-107 & 131, 140-175 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-39 of U.S. Patent No. 6,261,856 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because as discussed in section 3 of the action mailed 12/27/2005, the claims of the patent to Shinohara et al (856) were found to contain limitations of the remaining crystallization process claims, where limitations are claimed in different orders, such as in some patented independent claims the semiconductor is generic & in some it is amorphous Si. The present claims have been broadened from amorphous silicon into none single crystal line semiconductor layer which is encompassed by the patented claims, especially considering that since the layer in the patent claims is crystallized it must be nine single crystal in, otherwise it would be recrystallize, thus make obvious variations of overlapping scope. It was noted that the insulating (Si Oxide & Si Nitride) layers (claims 1, 6, 17 & 24) in the patent may be called "blocking layers" (claims 27-28 & 33-34) without "ion", but the ion blocking function is inherent or obvious by context of like configurational placement of like compositions in the claimed "active matrix circuit and driving circuit", so is considered equivalently used in the patent claims, especially considering that the patent derives its support for its terms' meaning from the same disclosure as the present case. The semiconductor film thickness of 200-1500 angstroms is in patent claim 8, but has been deleted from the present claims, hence is no longer an issue. Applicant has added to claims 61 & analogous claims (see above) the limitation of removing a layer, which is not

necessarily even there, hence is presently written this limitation cannot affect differentiation as it is unclear how to remove a layer which may not be present.

Claims 66 and analogous claims have been amended to include the non-single crystal semiconductor layer having been doped with boron are arsenic & modified the moving limitation, however a patent claims have limitations to moving which are not significantly differentiated by adding the phrasing of "a relative location", and they also include use of dopant impurities such as boron and arsenic as exemplified by patent claim 26, thus these limitations added to the claims do not provide significant differentiation, thus do not remove the obviousness double patenting rejections.

Also note with respect to forming a insulating date layer on the semiconductor layer and thereafter irradiating claim 27 of the patent include such a process. Also while the patent claims do not specify deposition of metal gate electrodes, they are claiming formation of thin film transistor is, with active matrix circuit is in driving circuit, hence in order to be functional they must have deposition of such electrodes in order to complete the device formation, where metal is a conventional material used therefore, hence it would've been obvious to one of ordinary skill in the art in order to preform the complete formation of claimed device formation processes to perform this additional step.

4. Applicant's arguments filed 6/27/2006 & 8/25/2006 have been fully considered but they are not persuasive.

5. Applicant's arguments filed 6/27/2006 & 8/25/2006 and discussed above have been fully considered but they are not persuasive

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing

date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on M-F from about 8:30 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks, can be reached at (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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11/13/2006